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General

The circuit-breaker design with **ACB-circuit-breaker 3WL** is used for the incoming supply of the switchboard and for outgoing feeders and **bus couplers** of 630-3200 A. For the circuit-breaker design applies that only one functional unit (only a circuit-breaker) is used per cubicle.

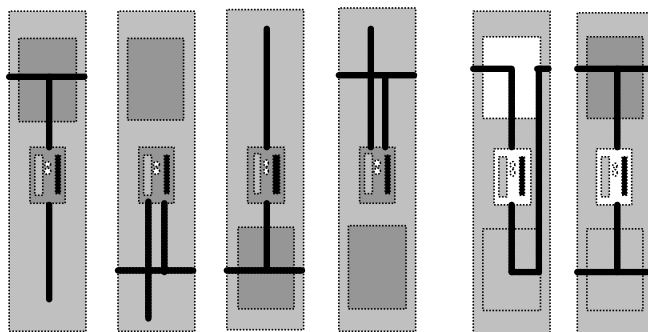
Structure and Functions

The following cubicle types are available depending on function, switchgear rated currents and required short-circuit strength:

Cable connection front

Cable supply optional from below or from top*

* Provide cable flange plates!



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BC L

BC T

Cubicle type	Function	Installation type	Size/ Rated current
	optional: • incoming supply • coupling • outgoing feeder	optional: • withdraw. • fixed-mounted	BG. I up to 1600 A BG. II up to 3200 A

Internal separation / doors

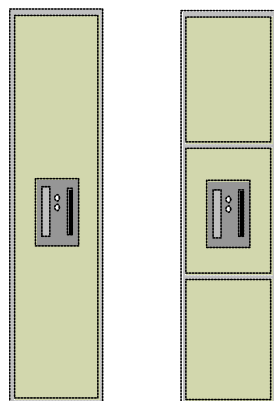
Various stages of internal separation are available according to requirements (does not correspond to „Form of internal separation“ according to IEC 60439-1)

- Covering the busbars
- Partition wall between 2 cubicles

Sequencing door type can be used:

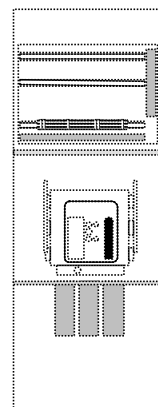
non-ventilated IP54 (Caution: plexiglass cover 150 mm deep is necessary)

ventilated ≤ IP41



Auxiliary Compartment

There is a type-specific auxiliary compartment to integrate additional devices, e.g. for interlocking devices.



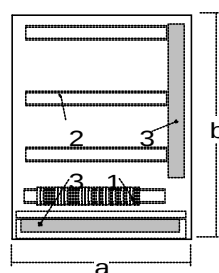
← auxiliary compartment

← switching device compartment

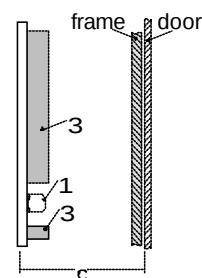
← cable connection compartment

The auxiliary compartment is installed separately from the switching device compartment, independent of the form of internal separation.

Structure and dimensions of auxiliary compartment



- 1 Terminal blocks
- 2 Mounting rail
- 3 Wiring duct



Cubicle width [mm]	a	b	c
400	320	620	320 (+22,5 door depth)
600	520		
800	720		

Installation of Instruments

The instruments are in the door in front of each auxiliary compartment.

With the incoming supply function from above the standard location of the auxiliary compartment is below the ACB compartment.

Instruments with little depth can be located above the ACB as before.

Cable connection compartment

Cable connection possibilities to 3WL circuit-breaker:

Cross-section 4½-conductor [mm²] up to 240	Quantity of the connectable cable cross sections depending on rated current				
	630 A	800 A	1000 A	1250 A	1600 A
up to 240	4	4	4	6	6
4½-conductor [mm²] up to 240					
	2000 A	2500 A	3200 A		
up to 240	9	9	11		
3½-conductor [mm²] up to 300					
	2000 A	2500 A	3200 A		
up to 300	9	9	11		

Optional covers [which are listed in the project procedure SIMARIS SIVACON under project aid](#) can be installed.

Variety of connecting bars for PE, N, PE/N and PEN

Depending on the type of led-in cable used, it must be connected to the individual bars in the cabinet via connection bars:

Type of led-in cables	Type of bar in cubicle
PE	PE
PEN	PEN
PE + N	PE + N
PEN	PE/N*

*) One N conductor is branched off from the led-in PEN conductor to create the PE/N function. Busbars are connected to the relevant horizontal PE and N bars via bars. At the same time, the PE and N bars are connected in the cabinet via an isolating lug.

Rated Currents for 1 Circuit-Breaker/Cubicle with 3WL

Rated current I_n as a function of ambient temperature Incoming supply or outgoing feeder function with cable or bus connection from bottom														3WL	
non-ventilated							ventilated							Type	Rated-current [A]
20° [A]	25° [A]	30° [A]	35° [A]	40° [A]	45° [A]	50° [A]	20° [A]	25° [A]	30° [A]	35° [A]	40° [A]	45° [A]	50° [A]		
630	630	630	630	630	630	630	630	630	630	630	630	630	630	3WL1106	630
800	800	800	800	800	800	800	800	800	800	800	800	800	800	3WL1108	800
1000	1000	1000	1000	1000	1000	970	1000	1000	1000	1000	1000	1000	1000	3WL1110	1000
1210	1180	1140	1100	1060	1020	975	1250	1250	1250	1240	1190	1150	1100	3WL1112	1250
1600	1600	1600	1580	1530	1490	1450	1600	1600	1600	1600	1600	1580	1530	3WL1116	1600
1820	1770	1710	1650	1590	1530	1470	1870	1810	1750	1690	1630	1570	1500	3WL1220	2000
2180	2130	2080	2030	1970	1920	1860	2500	2480	2420	2360	2300	2230	2170	3WL1225	2500
2600	2540	2480	2410	2350	2280	2220	3200	3130	3050	2980	2900	2820	2730	3WL1232	3200

Rated current I_n as a function of ambient temperature Incoming supply or outgoing feeder function with cable or bus connection from top														3WL	
non-ventilated							ventilated							Type	Rated current [A]
20° [A]	25° [A]	30° [A]	35° [A]	40° [A]	45° [A]	50° [A]	20° [A]	25° [A]	30° [A]	35° [A]	40° [A]	45° [A]	50° [A]		
630	630	630	630	630	630	630	630	630	630	630	630	630	630	3WL1106	630
800	800	800	800	800	800	800	800	800	800	800	800	800	800	3WL1108	800
1000	1000	1000	1000	1000	1000	970	1000	1000	1000	1000	1000	1000	1000	3WL1110	1000
1210	1180	1140	1100	1060	1020	975	1250	1250	1250	1240	1190	1150	1100	3WL1112	1250
1420	1390	1350	1320	1280	1250	1210	1590	1560	1520	1480	1440	1400	1360	3WL1116	1600
1820	1770	1710	1650	1590	1530	1470	1870	1810	1750	1690	1630	1570	1500	3WL1220	2000
2040	1980	1920	1850	1780	1710	1640	2130	2070	2000	1930	1860	1790	1710	3WL1225	2500
2460	2390	2310	2240	2150	2070	1980	2990	2900	2810	2710	2610	2510	2410	3WL1232	3200

Rated current I_n as a function of ambient temperature Longitudinal coupler function														3WL	
non-ventilated							ventilated							Type	Rated current [A]
20° [A]	25° [A]	30° [A]	35° [A]	40° [A]	45° [A]	50° [A]	20° [A]	25° [A]	30° [A]	35° [A]	40° [A]	45° [A]	50° [A]		
630	630	630	630	630	630	630	630	630	630	630	630	630	630	3WL1106	630
800	800	800	800	800	800	800	800	800	800	800	800	800	800	3WL1108	800
1000	1000	980	960	930	910	880	1000	1000	1000	1000	1000	1000	990	3WL1110	1000
1240	1210	1180	1150	1120	1090	1060	1250	1250	1250	1250	1250	1250	1250	3WL1112	1250
1460	1430	1390	1360	1320	1290	1250	1600	1600	1600	1600	1600	1600	1550	3WL1116	1600
1800	1760	1710	1670	1630	1580	1530	2000	2000	2000	2000	2000	1960	1910	3WL1220	2000
2010	1970	1920	1870	1820	1770	1720	2500	2500	2470	2410	2340	2280	2210	3WL1225	2500
2290	2240	2190	2130	2070	2020	1960	2990	2920	2850	2780	2700	2630	2550	3WL1232	3200

Rated current I_n as a function of ambient temperature Transverse coupler function														3WL	
non-ventilated							ventilated							Type	Rated current [A]
20° [A]	25° [A]	30° [A]	35° [A]	40° [A]	45° [A]	50° [A]	20° [A]	25° [A]	30° [A]	35° [A]	40° [A]	45° [A]	50° [A]		
630	630	630	630	630	630	630	630	630	630	630	630	630	630	3WL1106	630
800	800	800	800	800	800	800	800	800	800	800	800	800	800	3WL1108	800
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	3WL1110	1000
1250	1250	1230	1200	1170	1140	1100	1250	1250	1250	1250	1250	1250	1250	3WL1112	1250
1600	1600	1600	1580	1530	1490	1450	1600	1600	1600	1600	1600	1580	1530	3WL1116	1600
1820	1770	1710	1650	1590	1530	1470	1870	1810	1750	1690	1630	1570	1500	3WL1220	2000
2180	2130	2080	2030	1970	1920	1860	2500	2480	2420	2360	2300	2230	2170	3WL1225	2500
2600	2540	2480	2410	2350	2280	2220	3200	3130	3050	2980	2900	2820	2730	3WL1232	3200

Space requirement for 3 and 4-pole 3WL Circuit-Breakers

Type	3WL 1106	3WL 1108	3WL 1110	3WL 1112	3WL 1116	3WL 1220	3WL 1225	3WL 1232
Rated current [A]	630	800	1000	1250	1600	2000	2500	3200
1 circuit-breaker / cubicle with 3WL 3-pole								
Cubicle width [mm]	400 ¹⁾ / 600					600 ²⁾ / 800		
1 circuit-breaker / cubicle with 3WL 4-pole								
Cubicle width [mm]	600					800		

- 1) For cubicle width 400 mm **no longitudinal coupler**, no espagnolette lock with rod driven tumblers and no mutual mechanical interlock of the circuit-breakers is possible.
- 2) For cubicle width 600 mm **no coupling**, no espagnolette lock with rod driven tumblers and no mutual mechanical interlock of the circuit-breakers is possible.

General

The circuit-breaker with **MCCB – circuit-breaker 3VL** is used for the incoming supply of the switchboard and for outgoing feeders and **transverse couplers** of 630 - 1600 A. For the circuit-breaker design applies that only one functional unit (only one circuit-breaker) is used per cubicle.

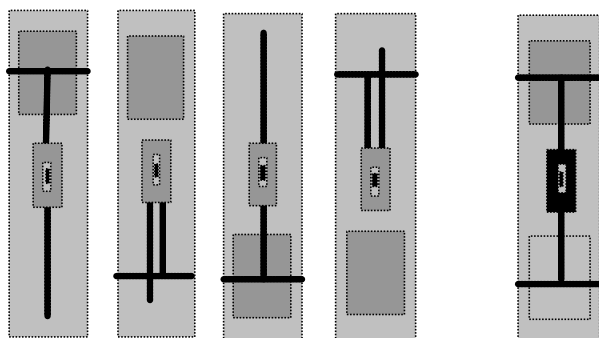
Structure and Functions

The circuit-breaker/cubicle with MCCB – circuit-breaker 3VL is built analog the circuit-breaker/cubicle 3WL, i. e. it is partitioned in auxiliary compartment, switching device compartment and cable connection compartment.

Cable connection front

Cable supply optional from bottom or from top*

* Provide cable flange plates



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Cubicle type	Function	Installation type	Rated current
	optional: - Incoming unit - Transverse coupling - Outgoing feeder	optional: - Fixed-mounted - Socket (on demand)	up to 1600 A

Internal Separation / doors

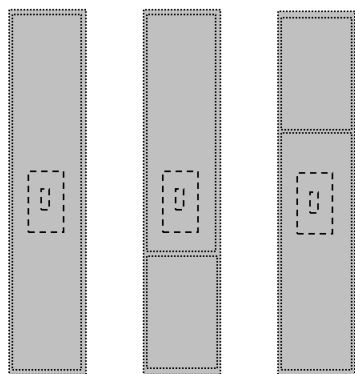
Various stages of internal separation are available according to requirements (does not correspond to „Form of internal separation“ according to IEC 60439-1)

- Covering the busbars
- Partition wall between 2 cubicles

Sequencing door type can be used:

BC T only with cubicle height of door

non-ventilated IP54
ventilated ≤ IP41


cable
from below

cable
from top

Switching device compartment

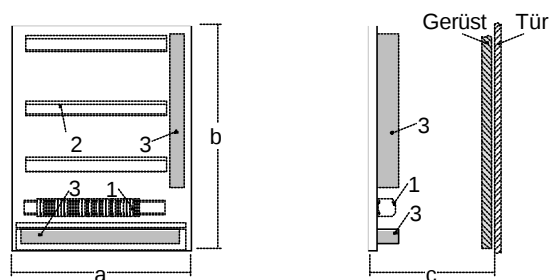
Die MCCB – circuit-breakers are fixed on a backside mounting plate. The following operating variants are possible:

- 3VL Hand drive operation behind the door (Standard)
Door coupling (insert door-cutout)
Motor drive

Auxiliary compartment

In the auxiliary compartment an unbent mounting plate is fixed above the switching device compartment.

Structure and dimensions of auxiliary compartment



- Terminal blocks
- Mounting rail
- Wiring duct

Cubicle width [mm]	a	b	c
400	320	480	320
600	520		(+22,5 door depth)

Installation of Instruments

The instruments are in the door in front of each auxiliary compartment.

With the incoming supply function from above the standard location of the auxiliary compartment is below the ACB compartment.

Instruments with little depth can be located above the ACB as before.

Cable connection compartment

Cross-section	Number of the connecting cable cross-sections depending on device type		
4½-conductor [mm²]	up to 630 A	up to 800 A	up to 1600 A
up to 240	4	4	6

Optional covers which are listed in the project procedure **SIMARIS SIVACON** under project aid can be installed

Rated currents for 1 circuit-breaker / cubicle with 3VL

Rated currents I_n as a function of ambient temperature Incoming supply or outgoing feeder function with cable or bus connection from bottom														3VL	
non-ventilated							ventilated							Type	Rated current [A]
20° [A]	25° [A]	30° [A]	35° [A]	40° [A]	45° [A]	50° [A]	20° [A]	25° [A]	30° [A]	35° [A]	40° [A]	45° [A]	50° [A]		
575	560	540	525	505	485	465	630	610	590	570	550	530	505	3VL5763	630
750	730	705	680	655	630	605	805	780	755	730	705	675	645	3VL6780	800
1090	1060	1030	990	955	920	880	1220	1180	1140	1100	1060	1020	980	3VL7712	1250
1090	1060	1030	990	955	920	880	1220	1180	1140	1100	1060	1020	980	3VL8716	1600

Rated currents I_n as a function of ambient temperature Incoming supply or outgoing feeder function with cable or bus connection from top														3VL	
non-ventilated							ventilated							Type	Rated current [A]
20° [A]	25° [A]	30° [A]	35° [A]	40° [A]	45° [A]	50° [A]	20° [A]	25° [A]	30° [A]	35° [A]	40° [A]	45° [A]	50° [A]		
575	560	540	525	505	485	465	630	610	590	570	550	530	505	3VL5763	630
750	730	705	680	655	630	605	805	780	755	730	705	675	645	3VL6780	800
1090	1060	1030	990	955	920	880	1220	1180	1140	1100	1060	1020	980	3VL7712	1250
1090	1060	1030	990	955	920	880	1220	1180	1140	1100	1060	1020	980	3VL8716	1600

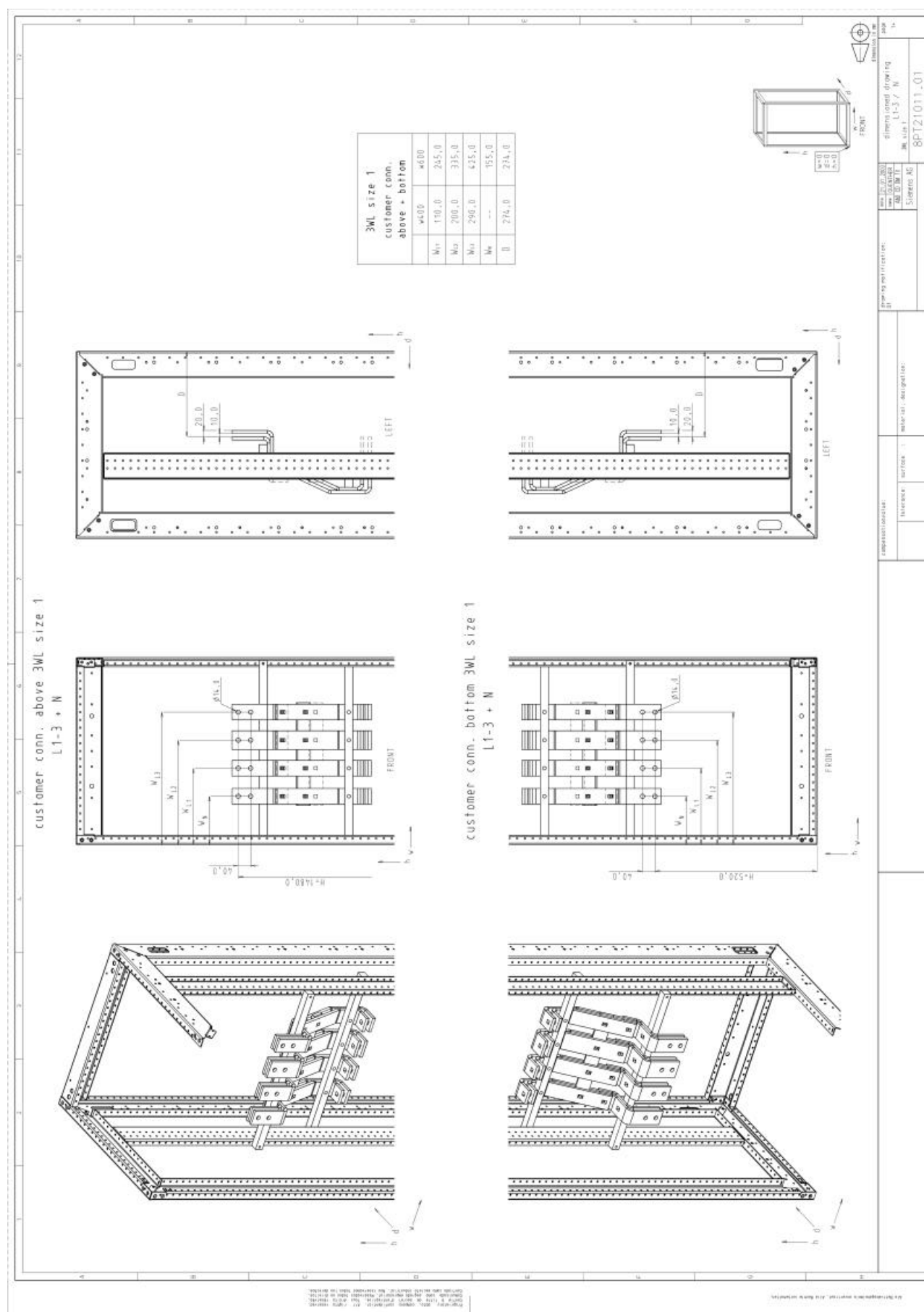
Rated currents I_n as a function of ambient temperature Transverse coupler function														3VL	
non-ventilated							ventilated							Type	Rated current [A]
20° [A]	25° [A]	30° [A]	35° [A]	40° [A]	45° [A]	50° [A]	20° [A]	25° [A]	30° [A]	35° [A]	40° [A]	45° [A]	50° [A]		
575	560	540	525	505	485	465	630	610	590	570	550	530	505	3VL5763	630
750	730	705	680	655	630	605	805	780	755	730	705	675	645	3VL6780	800
1090	1060	1030	990	955	920	880	1220	1180	1140	1100	1060	1020	980	3VL7712	1250
1090	1060	1030	990	955	920	880	1220	1180	1140	1100	1060	1020	980	3VL8716	1600

Space requirement for 3VL for 3 and 4-pole circuit-breaker

Type	3VL 5763	3VL 6780	3VL 7712	3VL 8716
Rated current [A]	630	800	1250	1600
1 circuit breaker / cubicle with 3VL 3-pole				
Cubicle width [mm]	400 ¹⁾			
1 circuit breaker / cubicle with 3VL 4-pole				
Cubicle width [mm]	600 ¹⁾			

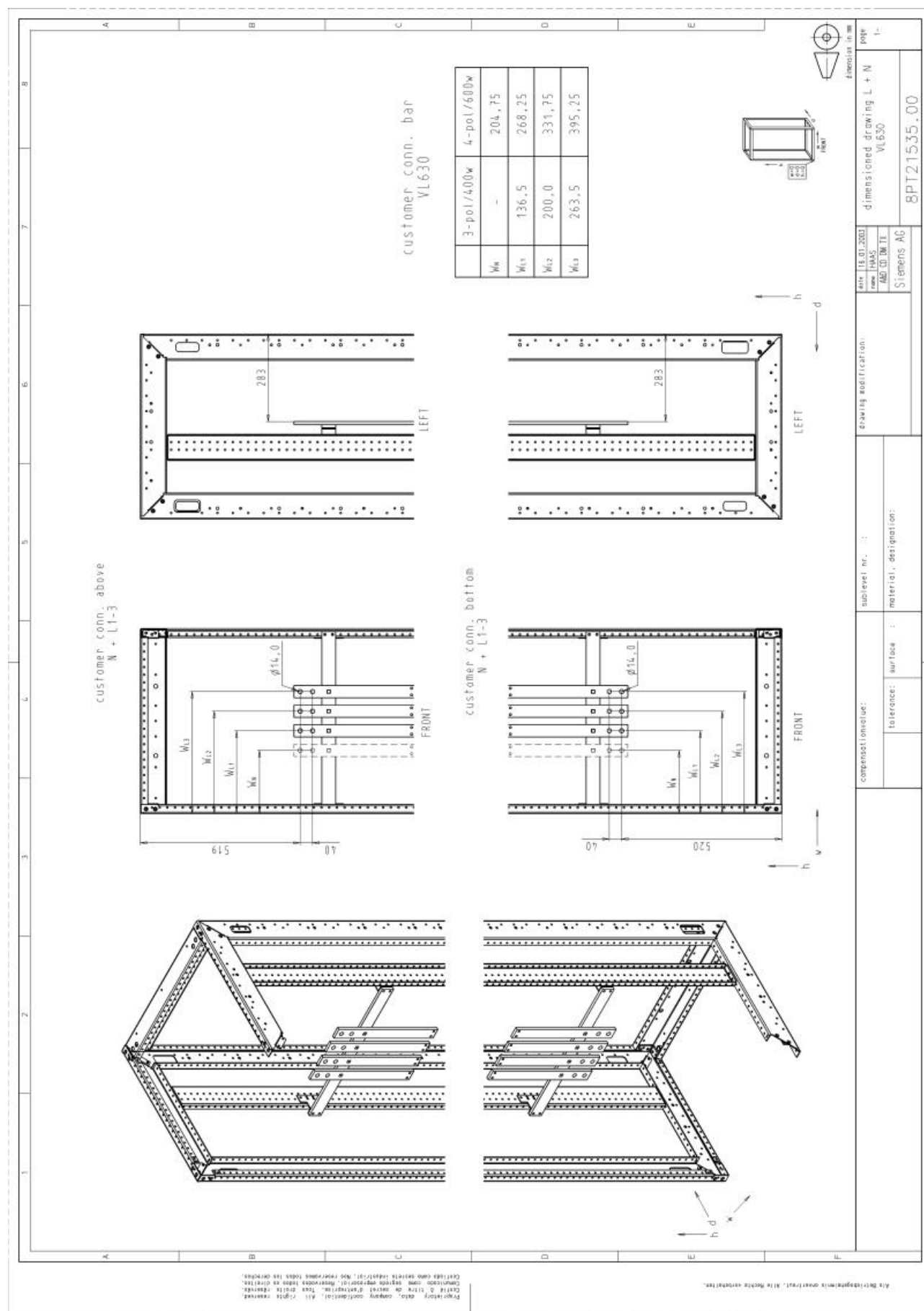
1) espagnolette lock with rod driven tumblers possible

Dimension Drawings for bar connection 3WL size 1 (L1 - L3 + N)



3WL size 2	customer conn.	above + bottom
W ₁	160.0	290.0
W ₂	300.0	430.0
W ₃	440.0	570.0
W ₄	—	170.0

Dimension Drawings for bar connection 3VL630 (L1 - L3 + N)



customer conn. above
N + L1-3

customer conn. bottom
N + L1-3

customer conn. bar
VL800

	3-pol/400w	4-pol/600w
W ₄	-	204,75
W ₁₁	136,5	268,25
W ₁₂	200,0	331,75
W ₁₃	263,5	395,25

dimensions in mm

drawing modification:

sublevel nr.:

material, designation:

tolerance:

surface:

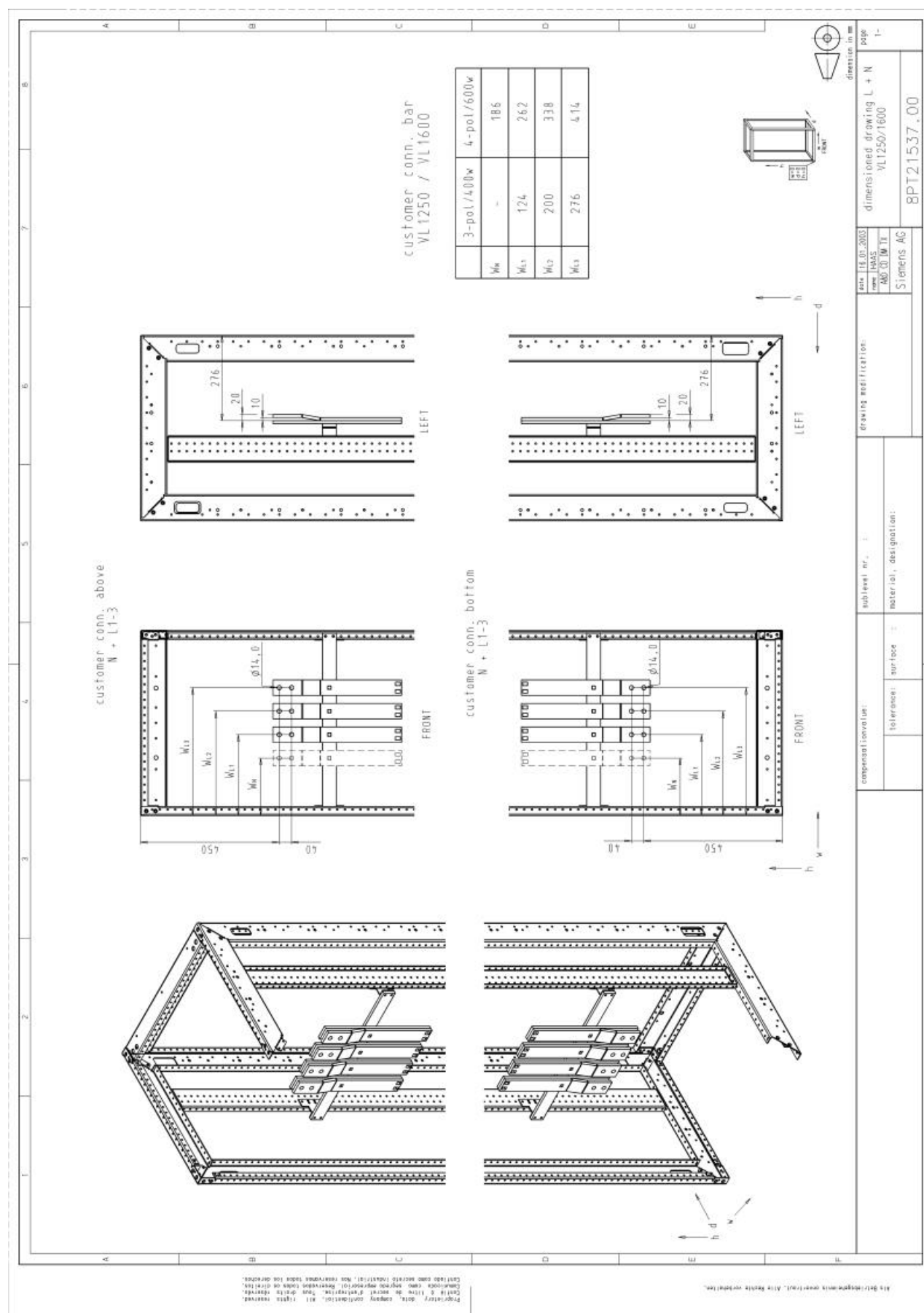
component-values:

date: 16.01.2013
name: HAAS
AND: 02.01.13

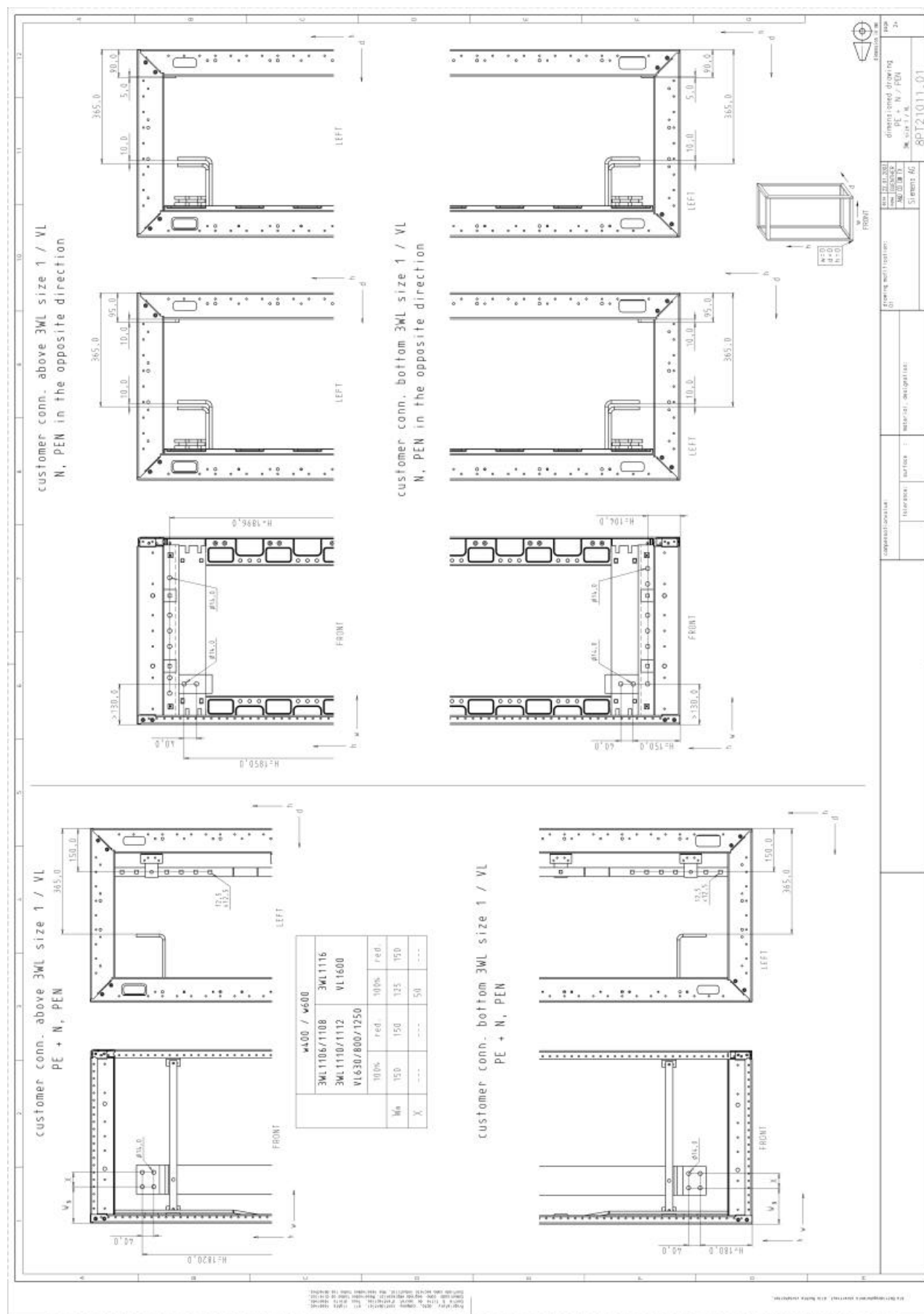
dimensioned drawing L + N
VL800

Siemens AG
8PT21536.00

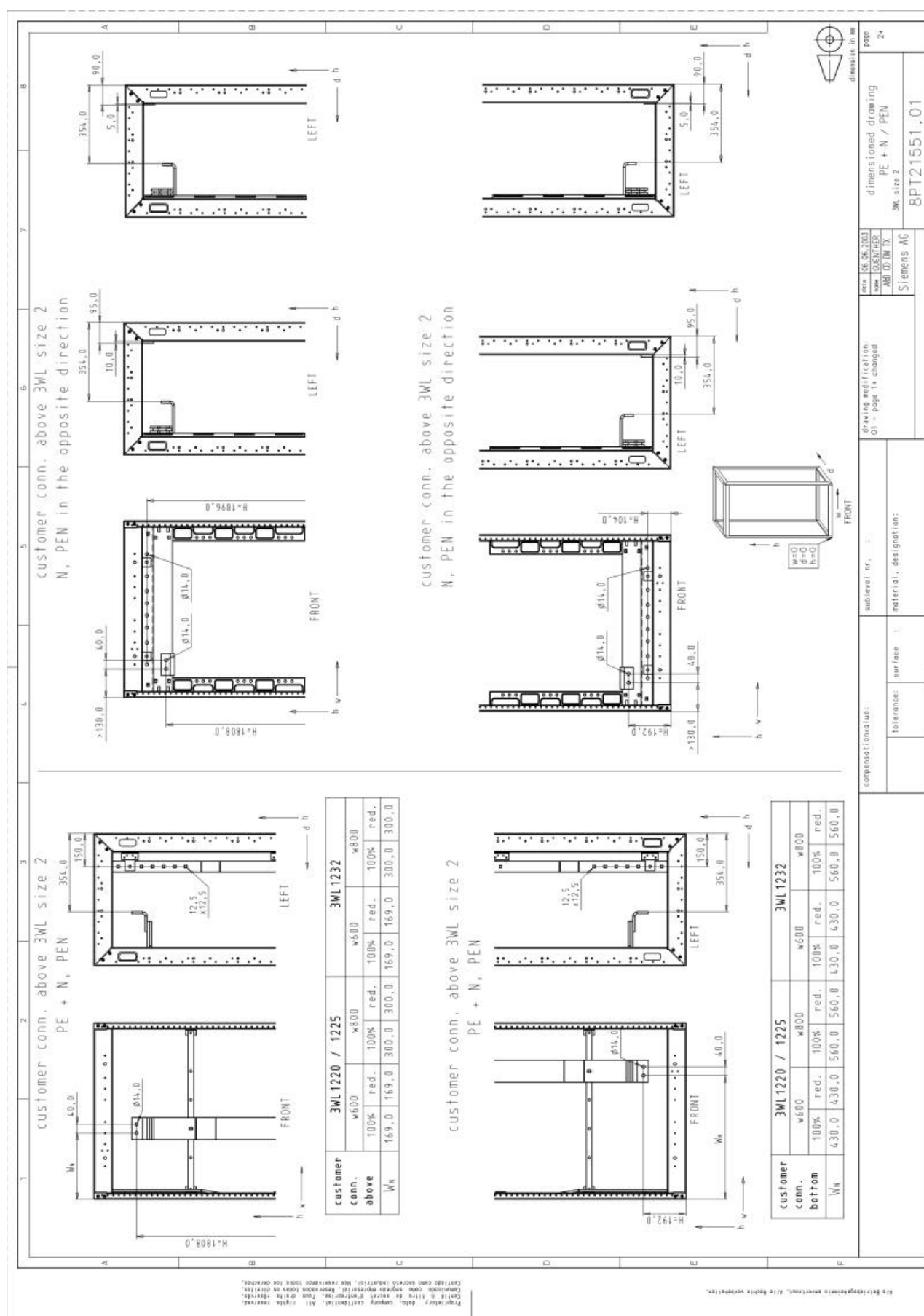
Dimension Drawings for bar connection 3VL1250/1600 (L1 - L3 + N)



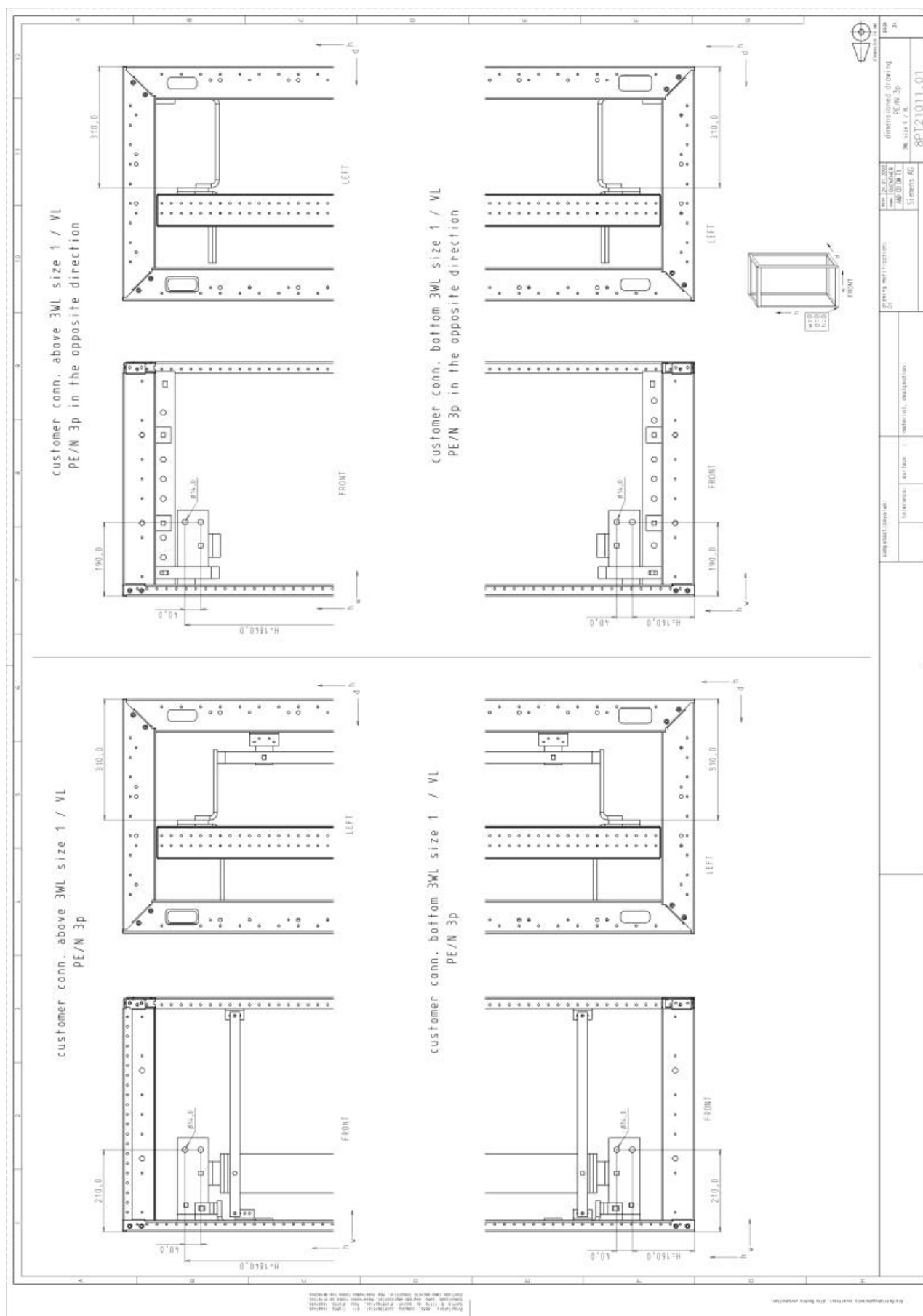
Dimension Drawings for bar connection 3WL size 1 / 3VL (PE + N / PEN)



Dimension Drawings for bar connection 3WL size 2 (PE + N / PEN)



Dimension Drawings for bar connection 3WL size 1 / 3VL (PE / N 3p)



customer conn., above 3WL size 2

PE/N 3p in the opposite direction

customer conn. above		3WL1220 / 1225		3WL1232	
W	w600	317.5	282.5	62.5	60.0
X	x50.0	50.0	50.0	40.0	40.0
Y	y40.0	40.0	40.0	40.0	40.0

customer conn., above 3WL size 2

PE/N 3p in the opposite direction

customer conn. above		3WL1220 / 1225		3WL1232	
W	w600	317.5	282.5	62.5	60.0
X	x50.0	50.0	50.0	40.0	40.0
Y	y40.0	40.0	40.0	40.0	40.0

customer conn., below 3WL size 2

PE/N 3p

customer conn. bottom		3WL1220 / 1225		3WL1232	
W	w600	432.5	267.5	62.5	60.0
X	x50.0	50.0	50.0	40.0	40.0
Y	y40.0	40.0	40.0	40.0	40.0

customer conn., below 3WL size 2

PE/N 3p

customer conn. bottom		3WL1220 / 1225		3WL1232	
W	w600	432.5	267.5	62.5	60.0
X	x50.0	50.0	50.0	40.0	40.0
Y	y40.0	40.0	40.0	40.0	40.0

dimensioning

drawing and fabrication:
D1 - page 14 changed

sublevel nr.: 11

material, designation:

tolerance: surface

compensation value:

date: 28.05.2003
author: D1
check: D1

dimensioned drawing:
PE/N 3p
3WL size 2

8PT1551.01